LAB 6

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Create a package CIE which has two classes- Student and Internals. The class Student has members like usn, name, sem. The class Internals derived from Student has an array that stores the internal marks scored in five courses of the current semester of the student. Create another package SEE which has the class External which is a derived class of Student. This class has an array that stores the SEE marks scored in five courses of the current semester of the student. Import the two packages in a file that declares the final marks of n students in all five courses.

CIE package should contain internal.class and student.class

SEE package should contain External.class

```
package CIE;
public class Student {
    protected String name;
    protected int[] marks;
    public Student(String name) {
        this.name = name;
        this.marks = new int[5];
    }
    public String getName() {
        return name;
    }
    public void setMarks(int[] marks) {
        this.marks = marks;
    }
```

```
    public int[] getMarks() {
        return marks;
    }
}

package CIE;
public class Internal extends Student {
    int[] internalMarks;
    public Internal(String name, int[] internalMarks) {
        super(name);
        this.internalMarks = internalMarks;
        this.setMarks(internalMarks);
    }
}

package SEE;
import CIE.Student;
public class External extends Student {
    int[] externalMarks;
    public External(String name, int[] externalMarks) {
        super(name);
        this.externalMarks = externalMarks;
        this.setMarks(externalMarks);
    }
}

import CIE.Internal;
import SEE.External;
import java.util.Scanner;
public class Main {
```

```
    public static void main(String[] args) {
        System.out.println("Abhinav Sanjay 1BM23CS009");
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter the number of students:
");         int n = sc.nextInt();         sc.nextLine();
        Internal[] internalStudents = new Internal[n];
External[] externalStudents = new External[n];
for (int i = 0; i < n; i++) {
            System.out.print("Enter the Name of student " + (i + 1) + ": ");
            String name = sc.nextLine();
            System.out.println("Enter Internal Marks (5 courses) for " + name + ":
");             int[] internalMarks = new int[5];             for (int j = 0; j < 5; j++) {
internalMarks[j] = sc.nextInt();
            }
            sc.nextLine();
            System.out.println("Enter External Marks (5 courses) for " + name + ": ");
int[] externalMarks = new int[5];             for (int j = 0; j < 5; j++) {
                System.out.print("Enter Marks: ");
externalMarks[j] = sc.nextInt();
            }             sc.nextLine();             internalStudents[i] = new
Internal(name, internalMarks);             externalStudents[i] = new
External(name, externalMarks);
        }
        System.out.println("\nFinal Marks for all students:");
for (int i = 0; i < n; i++)
        {
            int[] internalMarks = internalStudents[i].getMarks();
int[] externalMarks = externalStudents[i].getMarks();
```

```
            System.out.println("\nStudent: " +
internalStudents[i].getName());             System.out.print("Internal Marks:
");              for (int mark : internalMarks) {
                System.out.print(mark + " ");
            }
            System.out.print("\nExternal Marks: ");
for (int mark : externalMarks) {
                System.out.print(mark + " ");
            }
            System.out.print("\nFinal Marks: ");
for (int j = 0; j < 5; j++) {
                int finalMark = internalMarks[j] + externalMarks[j];
                System.out.print(finalMark + " ");
            }
            System.out.println();
        }
sc.close();
    }
}
```

Output:

```
C:\Abhinav 3A\Package>java Main
Enter the number of students: 1
Enter the name of student 1: Abhinav
Enter internal marks (5 courses) for Abhinav:
78
89
98
87
76
Enter external marks (5 courses) for Abhinav:
78
89
87
89
87

Final Marks for all students:

Student: Abhinav
Internal Marks: 78 89 98 87 76
External Marks: 78 89 87 89 87
Final Marks: 156 178 185 176 163
```